

REMARKS

Reconsideration is requested.

Claim 7 has been canceled above, without prejudice.

Claims 4-6, which define methods, have been withdrawn from consideration as defining the non-elected subject matter of the Examiner's Group II defined in the Office Action of February 5, 2007. New claims 14-16 and 19-24 define methods similar to the non-elected subject matter of the Examiner's Group II defined in the Office Action of February 5, 2007.

Rejoinder and allowance of any claim defining a method of making and/or using a product defined by an allowable claim, at an appropriate time, are requested.

Claims 2, 3, 10 and 11 have been withdrawn from consideration as not reading on the elected species A of page 4 of the Office Action of February 5, 2007, however consideration of the claims is requested as the claims reading on the elected species are submitted to be patentable over the art for the reasons described herein. New claims 12-13 and 22-23 are submitted to read on the elected subject matter of the Examiner's Group I as well as the species A which was elected for purposes of initial search.

The claims are submitted to be in condition for allowance and consideration of the following in this regard is requested.

Support for the size range included in the amendments above can be found throughout the specification, such as in Table 4 on page 13 of the specification. No new matter has been added.

To the extent not obviated by the above amendments, the Section 103 rejection of claims 1, 8 and 9 over Yoshida (U.S. Patent No. 4,256,513) in view of Gonsiorawski (U.S. Patent No. 5,074,920) is traversed. Reconsideration and withdrawal of the rejection are requested in view of the above and the following distinguishing comments.

As noted by the Examiner, Yoshida does not disclose the use of lead-free solder. The Examiner relies on Gonsiorawski for a teaching of the use of lead-free solder.

The Examiner will appreciate however that Gonsiorawski teaches the disadvantages of using a dip-coated lead-free solder. The Examiner is requested to see Gonsiorawski at column 5, lines 58-66 wherein Gonsiorawski states as follows:

“By contrast, when modules prepared using the conventional dip-soldering techniques and a 96% tin/4% silver solder bath were subjected to the same test, bond yield was stable at the beginning of the test, but dropped to only 3% after 16 hours at 150.degree. C. This example demonstrates the surprising and completely unexpected superior thermal stability of photovoltaic cell modules prepared in accordance with this invention compared to prior art modules. ”

Gonsiorawski teaches the use of a flux-containing solder paste to reduce the

“problem of thermal instability [which] may be caused by the formation of intermetallic compounds between tin and silver”
See column 2, lines 57-62 of Gonsiorawski.

The claimed dip-coated solder-containing solar cell would have been contrary to the combined teachings of Gonsiorawski and Yoshida.

Claims 1-6, 8-13 and 19-24, highlight this distinction over the combination of the cited art.

As for claims 14-18, the applicants note that Yoshida teaches a silver paste having a powdery glass with an average grain size below 1 micrometer. See page 3 of

the Office Action of May 3, 2007 wherein the Examiner has similarly characterized the reference. Claims 14-18 require a powdery glass with an average grain size of 11 μm at most, which would be contrary to the combined teachings of Gonsiorawski and Yoshida.

The claims are submitted to be patentable over the combination of Gonsiorawski and Yoshida and withdrawal of the Section 103 rejection based on the same is requested.

To the extent not obviated by the above amendments, the Section 103 rejection of claims 1, 8 and 9 over Needes (U.S. Patent No. 4,235,644) in view of Gonsiorawski (U.S. Patent No. 5,074,920) is traversed. Reconsideration and withdrawal of the rejection are requested in view of the above and the following distinguishing comments.

The comments and patentable distinctions of the claims noted above with regard to Gonsiorawski and Yoshida are believed to be equally applicable to the combination of Gonsiorawski and Needes. Specifically, the Examiner has relied on Gonsiorawski in this combination for an alleged teaching of lead-free solder and relied on the teaching of Needes for an alleged teaching of a silver past having powdery glass with an average size below 1 micrometer. See pages 4-5 of the Office Action dated May 3, 2007. Withdrawal of the Section 103 rejection of claims 1, 8 and 9 over Needes and Gonsiorawski is requested.

The claims are submitted to be in condition for allowance. Rejoinder and allowance of all of the claims are requested. The Examiner is requested to contact the undersigned in the event anything further is required to place the claims in condition for allowance.

TANAKA et al
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Amendment

Respectfully submitted,

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